

State of Wisconsin



Department of Natural Resources Bureau of Air Management

Redesignation of Milwaukee Particulate Matter (TSP) Nonattainment Area to Attainment

Technical Support Document

Bureau of Air Management

May 2005

PUB: **AM-359 2005**

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Executive Summary

The Clean Air Act Amendments (CAAA) of 1977 required states to identify areas that did not attain the primary and secondary National Ambient Air Quality Standards (NAAQS) for total suspended particulate matter (TSP). Once identified, states were required to reduce particulate matter emissions such that the area met the TSP NAAQS by 1982.

During and after promulgation of the 1977 CAAA, air quality monitors in Milwaukee recorded particulate matter values that exceeded both the primary and secondary TSP NAAQS. A DNR air quality modeling analysis confirmed the air quality monitoring findings and defined the boundaries of the area in the City of Milwaukee which did not meet TSP NAAQS. The State of Wisconsin recommended to the United States Environmental Protection Agency (USEPA) that two small portions of the City of Milwaukee be designated as primary and secondary nonattainment areas for TSP. In March 1978, USEPA formally identified a primary and a secondary particulate matter “nonattainment area” in Milwaukee. In January 1980, DNR formally designated these areas as particulate matter (TSP) nonattainment areas.

A DNR modeling analysis indicated that particulate matter emissions from unpaved parking lots along with particulate matter fugitive and stack emissions from six point sources located either in or near the nonattainment areas significantly contributed to the high particulate matter values monitored in the area. In 1978, the City of Milwaukee began to reduce the number of unpaved parking lots. In 1979, DNR promulgated s. NR 154.11 (1) to (5), Wis. Adm. Code, (now NR 415.01 to 415.07, Wis. Adm. Code) that defined Reasonably Available Control Technology (RACT) for particulate matter sources. These RACT rules limited particulate emissions from the six point sources as well as from fugitive sources.

In May 1984, USEPA redefined the Milwaukee particulate matter nonattainment area based on monitoring data and modeling analyses supplied by DNR. USEPA replaced the primary and secondary nonattainment areas with one smaller secondary particulate matter nonattainment area.

In 1988, DNR requested that USEPA remove the secondary particulate matter nonattainment designation for the remaining particulate matter secondary nonattainment area in Milwaukee. USEPA approved this request on June 23, 1989 and the City of Milwaukee became a federal particulate matter attainment area.

DNR also wanted to change the state’s nonattainment area designation for portions of the City of Milwaukee but certain sections of ch. NR 415, Wis. Adm. Code, had to be changed before DNR could proceed with the state redesignation process. These rule changes became effective in July 2001.

Because the necessary rules are in place, DNR can proceed to redesignate portions of the City of Milwaukee from a state particulate matter (TSP) nonattainment area to attainment once there are eight calendar quarters (two years) of exceedance free TSP air quality monitoring data. The last recorded exceedance in the Milwaukee TSP nonattainment area occurred on April 15, 2003.

In order to complete this redesignation, DNR must prepare a Technical Support Document to explain why it believes the redesignation is warranted. DNR must hold a public hearing and accept public comments on the Technical Support Document and then decide whether the area should be redesignated.

This Technical Support Document explains why DNR believes a portion of the City of Milwaukee should be redesignated from particulate matter nonattainment to attainment.

Available air quality monitoring data and air emission inventory data presented in this document indicate that the air quality in the state TSP nonattainment area in Milwaukee meets TSP air quality standards and should be redesignated as a particulate matter attainment area.

Introduction

The Milwaukee TSP nonattainment area has a rich history of actions. In the late 1970s, DNR air quality monitors identified possible health and public welfare concerns in a large area of the City of Milwaukee. As part of the requirements for the Clean Air Act Amendments of 1977, DNR recommended to the United States Environmental Protection Agency (USEPA) the designation of one primary TSP nonattainment area and two TSP secondary nonattainment areas. These designations were controversial because DNR and Milwaukee government entities and businesses disagreed as to who and what was responsible for generating the particulate matter necessary to exceed the primary and secondary TSP air quality standards.

Although there was disagreement as to the cause of the high levels of particulate matter in the Milwaukee area, DNR and the Milwaukee government entities, namely the Southeastern Wisconsin Regional Planning Commission (SEWRPC) and the City of Milwaukee, worked together to improve the air quality in the designated TSP nonattainment areas. This improvement was apparent in 1984 when USEPA reduced the number of TSP nonattainment areas to a single secondary TSP nonattainment area.

The secondary TSP nonattainment area that remained has many industrial sources located in and near the nonattainment area. These industrial sources have gradually decreased particulate matter emissions since 1984 such that DNR no longer measures TSP secondary air quality standard exceedances or violations in the TSP nonattainment area.

Based on criteria established in Wisconsin statutes and DNR rules, DNR believes the air quality in the area meets the Wisconsin TSP secondary standards and consequently the current state designation of a TSP secondary nonattainment area should be changed to full attainment.

This document is organized to supply information regarding the original TSP nonattainment designations and the rationale for redesignating the remaining TSP secondary nonattainment area to an attainment area. The first section of this report discusses the TSP air quality standards. The second section identifies criteria an area must meet to either be designated as a nonattainment area or redesignated to full attainment. The third section discusses air quality monitoring. The fourth section supplies a history of the Milwaukee TSP nonattainment areas. The fifth section supplies information supporting the redesignation of the existing TSP nonattainment area to full attainment.

Section 1-Particulate Matter

Particulate Matter Definitions

Since the promulgation of the 1970 Clean Air Act, USEPA has modified the definition of particulate matter several times to reflect health studies which supported national ambient air quality standards (NAAQS). The first definition of particulate matter recognized particles less than 100 microns (about the diameter of a human hair) and below. The term coined for this particulate matter definition was TSP which stood for Total Suspended Particulate. In the mid-1980s, USEPA then changed the particulate matter definition to only include particulate matter with a size of 10 microns or less. The air quality standards developed to address this new definition of particulate matter referred to it as PM₁₀. Recently, in 1999, USEPA again amended its definition of particulate matter affecting public health and welfare to particulate matter at or below 2.5 microns. This particulate matter definition is called either PM_{2.5} or PM fine.

Particulate Matter NAAQS

Since 1971, USEPA has promulgated three different NAAQS for particulate matter.

In 1971, USEPA established a NAAQS for particulate matter with sizes less than or equal to 100 microns; this was also known as Total Suspended Particulate (TSP). The TSP NAAQS are listed in Table 1. The primary TSP NAAQS was designed to protect public health while the secondary TSP NAAQS was designed to protect public welfare. If a monitored value was greater than a 24-hour TSP NAAQS, the monitored value was known as an exceedance. Two exceedances in one year of the 24-hour NAAQS or an exceedance of the annual NAAQS values was considered a violation of the TSP NAAQS.

Table 1-TSP NAAQS

Averaging Time	Primary Standard (ug/m ³)	Secondary Standard (ug/m ³)
Annual (geometric mean)	75	60
24-hour	260 (not to be exceeded more than once per year)	150 (not to be exceeded more than once per year)

In 1984, USEPA replaced the TSP NAAQS with air quality standards concerned with particulate at sizes less than or equal to 10 microns; this was also known as PM₁₀. At the time USEPA replaced TSP with PM₁₀ as an air quality standard, Wisconsin decided to retain the 24-hour TSP value as a state secondary air quality standard. Wisconsin has also adopted a 24-hour and annual PM₁₀ air quality standards. (See s. NR 404.04(3) and (8), Wis. Adm. Code.)

Table 2-PM10 NAAQS

Averaging Time	Primary Standard (ug/m ³)	Secondary Standard (ug/m ³)
Annual (arithmetic mean)	50	50
24-hour	150 (not to be exceeded more than once per year)	

In 1997, USEPA added a new particulate matter standard that addressed particulate matter at or below 2.5 microns; this was also known as PM_{2.5} or PM_{fine}. Unlike the change from TSP to PM10, USEPA retained the PM10 air quality standard at the time that it adopted the PM_{2.5} standards..

Table 3-PM2.5 NAAQS

Averaging Time	Primary Standard (ug/m ³)	Secondary Standard (ug/m ³)
Annual (arithmetic mean)	15	15
24-hour	65	

The averaging times for the PM_{2.5} NAAQS are not as simplistic as those for TSP and PM10. In order to attain the annual PM_{2.5} standard, the 3-year average of the annual arithmetic mean PM_{2.5} concentrations from single or multiple community-oriented monitors must not exceed 15.0 ug/m³. In order to attain the 24-hour PM_{2.5} air quality standard, the 3-year average of the 98th percentile of 24-hour concentrations at each population-oriented monitor within an area must not exceed 65 ug/m³.

Section 2-Designation and Redesignation Requirements

Wisconsin Statute s. 285.23 and Chapter NR 401, Wis. Adm. Code, permit DNR to identify a nonattainment area and then also reclassify a nonattainment area into an attainment area. DNR is required to issue a document supporting the designation or redesignation, give notice of a public hearing regarding the action, receive public comments and address the public comments after the public hearing, and issue a final document not earlier than 30 days after the close of the public hearing.

For particulate matter, DNR has designated areas as nonattainment areas based on air quality monitoring data and air quality modeling. For nonattainment designation, the air quality monitoring data must show two violations of particulate matter air quality standards during four calendar quarters. (A violation is defined as two monitoring events where the monitored value exceeds either the primary or secondary air quality standard in the same calendar year.)

Similarly, DNR seeks attainment redesignations for particulate matter nonattainment areas that have not violated either the primary or secondary particulate matter air quality standards over eight calendar quarters.

Nonattainment areas can have both a federal and a state nonattainment designation. Generally the state designation coincides with the federal designation. In the 1970's and early 1980's, DNR would identify a nonattainment area, notify USEPA of the nonattainment area, and supply USEPA information to make the area a nonattainment area. The procedure used in doing this (writing a technical support document, holding a public hearing, etc.) met Wisconsin statutory requirements as well as USEPA designation requirements.

For Milwaukee, DNR and USEPA worked along parallel paths in the beginning. DNR submitted information to USEPA in 1978 that USEPA used to designate portions of the City of Milwaukee as TSP nonattainment areas. DNR identified the same areas as nonattainment areas. USEPA redefined the TSP nonattainment areas in 1985 after a request from DNR. USEPA removed the federal nonattainment designation in 1995 because the TSP air quality standards no longer existed. Because Wisconsin retained its 24-hour TSP secondary standard, Milwaukee was not redesignated as an attainment area at the same time as the 1995 USEPA action. DNR was still monitored exceedances and violations of the 24-hour TSP standard at locations in the City of Milwaukee particulate matter nonattainment area. The last exceedance occurred on April 15, 2003. DNR did not determine the area could be redesignated as an attainment area until it monitored eight calendar quarters (two years) of TSP air quality data that met TSP air quality standards.

Section 3-Air Quality Monitoring

Since 1970, the measurement of particulate matter from the surrounding air has become more sophisticated due to improvements in technology. TSP is measured through hi volume samplers which operate like large vacuum cleaners pulling air through a filter through a period of 24-hours. Once the 24-hour sampling is completed, the filter is removed from the sampler and then weighed and the captured particulate can then be analyzed by a certified lab. For PM₁₀ and PM_{2.5} the monitors must meet requirements contained in Appendix J of Chapter 40 Part 50 of the Code of Federal Regulations. Because this document is concerned with TSP, we will limit our discussion to TSP monitoring.

TSP Monitors Located In and Near Milwaukee TSP Nonattainment Area

After promulgation of TSP air quality standards, DNR established a large high volume sampler monitoring network throughout Wisconsin. Since EPA eliminated the federal TSP standard in 1987, DNR has gradually decreased the number of high volume samplers throughout the state. The next four graphics show how the TSP air quality monitors have decreased since 1978 in the area in and around the Milwaukee TSP secondary nonattainment area.

Figure 1

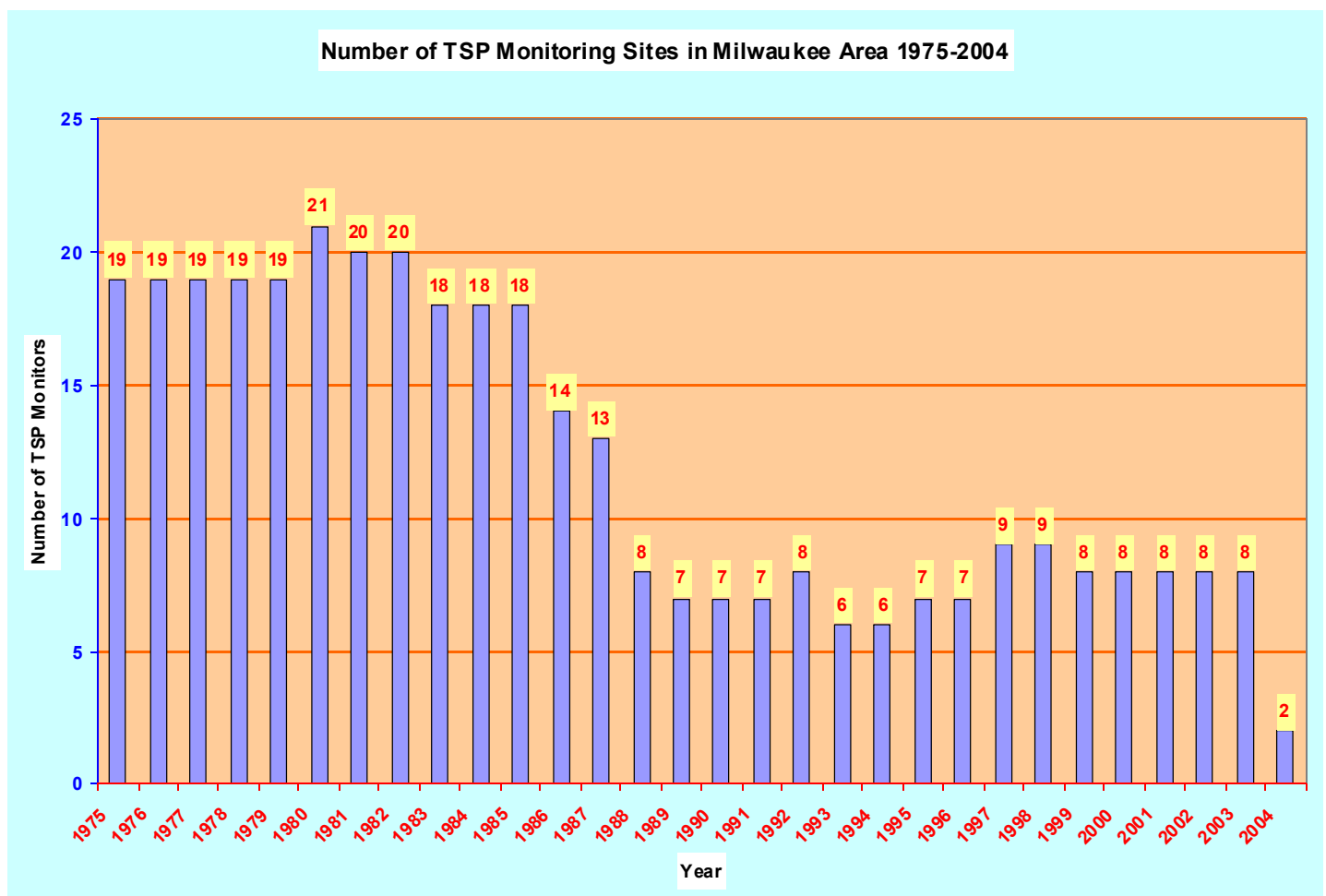


Figure 2
TSP Monitors Located in and Near
the Existing
Milwaukee TSP
Nonattainment Areas
1978

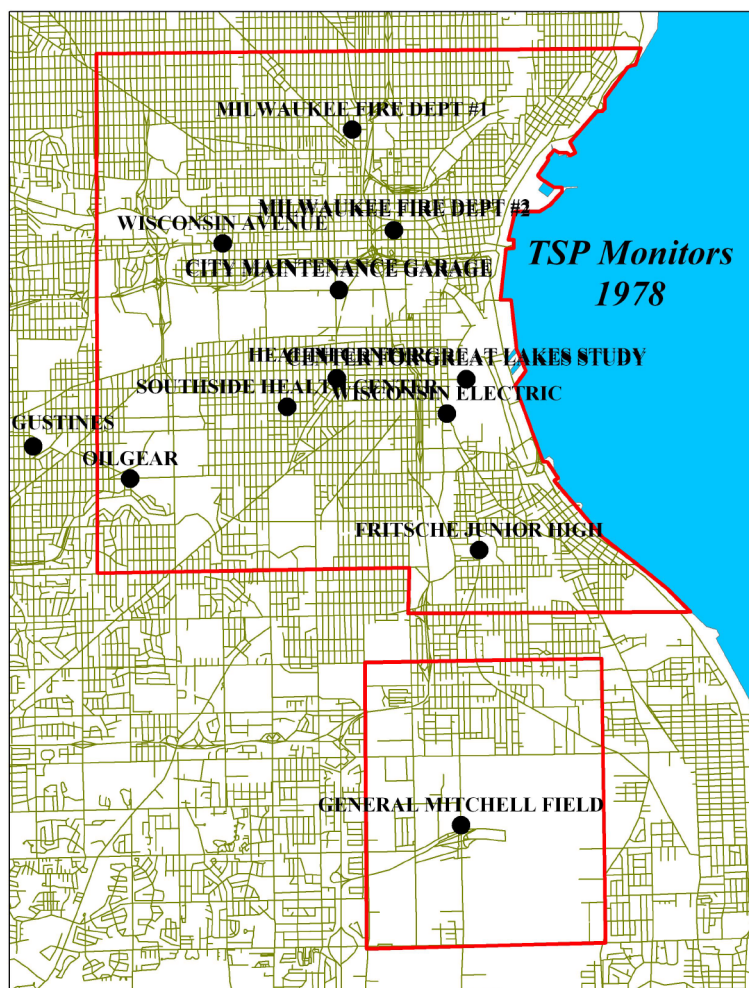
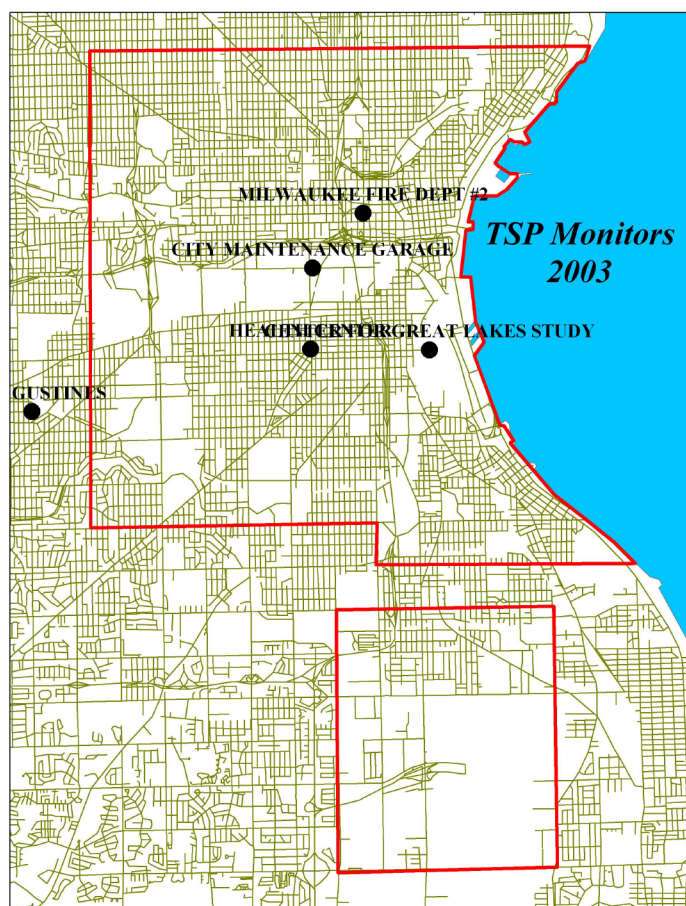


Figure 3
TSP Monitors Located in and
Near the Existing
Milwaukee TSP
Nonattainment
Areas
2003



Exceptional Events

Prior to the 1990 Clean Air Act Amendments, the Guidelines on the Identification and Use of Air Quality Data Affected by Exceptional Events (exceptional events guideline)¹ and Appendix K to 40 CFR, part 50, were issued by EPA to address, in part, the situation where natural sources strongly influence an area's air quality. To avoid imposing potentially unreasonable State implementation plan (SIP) requirements on such areas, EPA provided for the exclusion of certain natural source data from nonattainment determinations.

Appendix K provided, in part, that measured exceedances of NAAQS in an area may be discounted from decisions regarding nonattainment status if the data are shown to be influenced by uncontrollable events caused by natural sources of particulate matter. The 1986 exceptional events guideline contained EPA's guidance regarding the process States followed when dealing with air quality data that may be eligible for the adjustments authorized under section 2.4 of Appendix K.

The original Milwaukee TSP nonattainment designation considered exceptional events when determining whether the area should be a TSP nonattainment area. Because there were a large number of exceedances of both the primary and secondary TSP standard, these exceptional events were not a factor in the designation of portions of the City of Milwaukee as a TSP nonattainment area.

Section 4-History of the Milwaukee TSP

Nonattainment Area

Based on monitoring data collected in 1975, 1976, and the first half of 1977, DNR determined that primary and secondary TSP nonattainment areas existed in a portion of the City of Milwaukee.

Monitoring Data Supporting TSP Primary Nonattainment Area Designation

Violations of the primary TSP standard occurred in 1975 and 1976 at air quality monitoring sites located at the City Maintenance Garage, 230 South Muskego Avenue (1975); 300 East Greenfield (1975); and the Center for Great Lakes Study, 600 East Greenfield Avenue (1976). Tables 4 and 5 summarize the exceedances and violations of the secondary and primary TSP standards recorded at the Milwaukee TSP monitors from 1975-1977.

Table 4
1975, 1976, 1977 TSP Monitoring Data
Number of Secondary TSP NAAQS Exceedances and Violations

Monitoring Site	1975 Measured Exceedances	1975 Measured Violations	1976 Measured Exceedances	1976 Measured Violations	1977 Measured Exceedances	1977 Measured Violations
Manitoba Elementary School 4010 West Forest Home Drive Milwaukee	3	2	0	0	0	0
Wisconsin Telephone Company 845 North 35th Street Milwaukee	6	5	0	0	2	0
City Maintenance Garage 230 South Muskego Milwaukee	21	20	14	13	8	6
Fritsche Junior High School 2969 South Howell Milwaukee	1	0	0	0	1	0
Southside Health Center 1640 South 24th Street Milwaukee	2	1	2	1	0	0
Eagleburg School 5100 North 91st Street Milwaukee	0	0	0	0	1	0
Wisconsin Electric Power Company 1750 South Kinnikinnic Milwaukee	27	26	14	12	8	6
Mitchell Field Airport 5300 South Howell Milwaukee	0	0	3	1	4	2
Fire Department 1313 West Reservoir Street Milwaukee	6	5	0	0	2	1
Oilgear 2300 South 51st Street Milwaukee	3	2	0	0	0	0

Table 4 (cont)
1975, 1976, 1977 TSP Monitoring Data
Number of Secondary TSP NAAQS Exceedances and Violations

Monitoring Site	1975 Measured Exceedances	1975 Measured Violations	1976 Measured Exceedances	1976 Measured Violations	1977 Measured Exceedances	1977 Measured Violations
Center for Great Lakes Study 600 East Greenfield Avenue Milwaukee	10	9	9	7	4	2
Fire Department 711 West Wells Street Milwaukee	21	20	3	1	3	1
Grebe Bakery 5132 West Lincoln Avenue Milwaukee	11	10	Not Operating	Not Operating	Not Operating	Not Operating
General Electric Plant 4855 West Electric Avenue Milwaukee	14	13	Not Operating	Not Operating	Not Operating	Not Operating
Ervin Zientck 2334 South 52nd Street Milwaukee	13	12	Not Operating	Not Operating	Not Operating	Not Operating
Barclay Street 1550 Barclay Street Milwaukee	4	3	Not Operating	Not Operating	Not Operating	Not Operating
DNR-SED Headquarters 9722 West Watertown Plank Road Wauwatosa	0	0	1	0	1	0
Greenfield Avenue 300 East Greenfield Milwaukee	6	5	Not Operating	Not Operating	Not Operating	Not Operating

Table 5
1975, 1976, 1977 TSP Monitoring Data
Number of Primary TSP NAAQS Exceedances and Violations

Monitoring Site	1975 Measured Exceedances	1975 Measured Violations	1976 Measured Exceedances	1976 Measured Violations	1977 Measured Exceedances	1977 Measured Violations
Manitoba Elementary School 4010 West Forest Home Drive Milwaukee	0	0	0	0	0	0
Wisconsin Telephone Company 845 North 35th Street Milwaukee	0	0	0	0	0	0
City Maintenance Garage 230 South Muskego Milwaukee	3	2	1	0	1	0
Fritsche Junior High School 2969 South Howell Milwaukee	0	0	0	0	0	0
Southside Health Center 1640 South 24th Street Milwaukee	0	0	0	0	0	0
Eagleburg School 5100 North 91st Street Milwaukee	0	0	0	0	0	0

Table 5 (cont)_
1975, 1976, 1977 TSP Monitoring Data
Number of Primary TSP NAAQS Exceedances and Violations

Monitoring Site	1975 Measured Exceedances	1975 Episodes	1976 Measured Ex- ceedances	1976 Episodes	1977 Measured Ex- ceedances	1977 Episodes
Wisconsin Electric Power Company 1750 South Kinnikinnic Milwaukee	1	0	0	0	0	0
Mitchell Field Airport 5300 South Howell Milwaukee	0	0	1	0	0	0
Fire Department 1313 West Reservoir Street Milwaukee	1	0	0	0	0	0
Oilgear 2300 South 51st Street Milwaukee	0	0	0	0	0	0
Center for Great Lakes Study 600 East Greenfield Avenue Milwaukee	0	0	2	1	0	0
Fire Department 711 West Wells Street Milwaukee	0	0	0	0	0	0
Grebe Bakery 5132 West Lincoln Avenue Milwaukee	0	0	Not Operating	Not Operating	Not Operating	Not Operating
General Electric Plant 4855 West Electric Avenue Milwaukee	0	0	Not Operating	Not Operating	Not Operating	Not Operating
Ervin Zientck 2334 South 52nd Street Milwaukee	0	0	Not Operating	Not Operating	Not Operating	Not Operating
Barclay Street 1550 Barclay Street Milwaukee	0	0	Not Operating	Not Operating	Not Operating	Not Operating
DNR-SED Headquarters 9722 West Watertown Plank Road Wauwatosa	0	0	1	1	1	1
Greenfield Avenue 300 East Greenfield Milwaukee	2	1	Not Operating	Not Operating	Not Operating	Not Operating

At these monitoring sites a total of 228 exceedances and 186 violations of the TSP secondary standard were measured from 1975-1977. The number of violations would have been greater but some of the monitoring sites measured these statewide exceptional TSP events in 1976 and 1977:

September 3, 1976, a statewide TSP episode day
November 2, 1976, a statewide TSP episode day
May 13, 1977, a statewide TSP episode day

Also, there were a total of 12 exceedances and 4 violations of the primary TSP standard at these 18 monitoring sites from 1975-1977.

The monitoring data supported the designation of a primary TSP and two secondary nonattainment areas in portions of the City of Milwaukee.

First TSP Nonattainment Areas

As Tables 4 and 5 indicate, there were numerous exceedances and violations of the TSP standards in Milwaukee. DNR recommended to USEPA in 1978 to designate one TSP primary and two TSP secondary nonattainment areas based on the 1975-1977 TSP monitoring data. The TSP primary nonattainment area was smaller in areal extent as compared to the TSP secondary nonattainment areas.² The DNR made the same areas as state designated nonattainment areas.

Boundaries of nonattainment area as originally submitted on March 3, 1978

Primary TSP Nonattainment Area

North: St. Paul Avenue from corner 16th Street to Lake Michigan (body of water).

West: 16th Street south from St. Paul Avenue to Pierce Street, east on Pierce Street to 6th Street, south on 6th Street to Becher Street.

South: Becher Street east from 6th Street to Lake Michigan (body of water).

East: Lake Michigan (body of water).

Secondary TSP Nonattainment Area

North: Center Street east from 55th Street to Lake Michigan (body of water).

West: 55th Street south from North Avenue extended to 56th Street.

South: Oklahoma Avenue east from 56th Street to 6th Street, south on 6th Street to Morgan Avenue, east on Morgan Avenue to Lake Michigan (body of water).

East: Lake Michigan (body of water).

Subsequent DNR, Southeast Wisconsin Regional Planning Commission, City of Milwaukee Action

The designation of a primary and two secondary TSP nonattainment areas prompted DNR to complete a 1979 assessment of the situation. The DNR stated:

"Air quality monitoring done in the Southeastern Wisconsin Intrastate Air Quality Control Region (SEWIAQCR) from 1975 through 1978 and air dispersion modeling done for 1977 show areas which have not attained the primary and secondary annual and short term TSP NAAQS. The dispersion modeling analysis found the major cause of nonattainment to be industrial fugitive emissions. Therefore the DNR has proposed new air pollution control regulations to control industrial fugitive emissions. In addition, regulations to more stringently control point source emissions (by the application of Reasonably Available Control Technology (RACT)) and to continue the application of the emissions offset policy have been proposed.

Air dispersion modeling done for 1982 indicates that adoption and enforcement of the proposed rules will not result in attainment of the primary standard by 1982, although they will result in a considerable decrease in the size of areas in the SEWIAQCR exceeding the primary standard. In addition the modeling analysis did not adequately address the monitored nonattainment areas in Waukesha, Racine, and Kenosha. It was therefore recommended that further studies in the modeled and/or monitored nonattainment areas be done as necessary to determine how and when the TSP NAAQS can be attained. The studies may include air quality monitoring, air dispersion modeling, particulate sample analysis, and feasibility studies of nontraditional fugitive dust controls. It will probably be necessary to propose, adopt, and enforce further regulations to control emissions from sources not yet controlled (e.g., paved roads) which are found to have significant impact upon nonattainment areas."

After this document was published the DNR, City of Milwaukee, and Southeastern Wisconsin Regional Planning Commission (SEWRPC) participated in a study which was published in 1981. The publication, Fugitive Dust Emissions: Their Sources and Their Control in Milwaukee's Menomonee River Valley, recommended that the DNR, City of Milwaukee, and SEWRPC complete separate actions. The DNR should 1) enforce all existing State regulations pertaining to air quality as specified in the state implementation plan (SIP) for industrial process sources, fuel burning installations, and privately-owned sources of fugitive dust, 2) the DNR change its TSP monitoring procedures to use sample savers on all hi-vol samplers and thus not bias the TSP monitoring data, and 3) study the long range transport of particulate. The City of Milwaukee should 1) pave or otherwise treat all parking lots and other unpaved trafficable surfaces under its control which are located in or impact on a TSP nonattainment area, 2) construct curbs or paved shoulders and plant low-maintenance vegetation along sides of city roads which are located in or impact on a TSP nonattainment area, and 3) cooperate with DNR and SEWRPC in long-range particulate studies. SEWRPC should participate in a long-range TSP study. All of the recommendations were implemented with the exception of the long-range TSP study. DNR objected to the concept of this long-range TSP study because it disagreed with the assumption that a majority of the dust causing the TSP nonattainment problem in Milwaukee was due to the transport of the particulate from a large area outside the Milwaukee TSP nonattainment areas.

Revision of TSP Nonattainment Boundaries

In June, 1982 the City of Milwaukee petitioned the DNR to revise the boundaries of Milwaukee County's TSP nonattainment areas. In July, 1982 the DNR responded that it was preparing a document to revise those boundaries. SEWRPC wrote a letter to the DNR on January 31, 1983 supporting the City of Milwaukee's petition. This document was presented to the Natural Resources Board as an informational item in summer 1983.

On March 14, 1983 the DNR requested USEPA reduce the areal extent of the primary TSP nonattainment area and remove the secondary nonattainment designation to the other TSP nonattainment area. USEPA replied in June, 1983 that the information provided by DNR in its request was not sufficient.

The DNR worked on resolving the issues regarding the Milwaukee TSP nonattainment which USEPA detailed in June, 1983. The DNR submitted a Technical Support Document with summaries of the TSP ambient air monitoring data collected from 19 sites during the period 1979-1983. On March 13, 1984 the DNR revised its redesignation request, enlarging the size of the proposed secondary nonattainment area.

In the September 26, 1984 Federal Register, EPA in a proposed rulemaking, agreed DNR had supplied enough information to change the TSP nonattainment areas in Milwaukee County. USEPA said:

"The ambient air monitoring data show no violations of the primary TSP NAAQS from 1981-1983. The improvement in ambient TSP levels can be attributed to control strategies that have been implemented at the industrial sources located within the Milwaukee area, and to the permanent closure of several major particulate sources. Therefore, USEPA is proposing to approve the redesignation of Milwaukee from primary and secondary nonattainment to secondary nonattainment for TSP."

USEPA, in an October 9, 1985 Federal Register notice, officially revised the TSP nonattainment status for Milwaukee

Boundaries of nonattainment area as approved by USEPA on October 9, 1985

Secondary TSP Nonattainment area

North: Michigan Avenue from corner of 35th Street to Lake Michigan (body of water).

West: 35th Street south from Michigan Avenue to National Avenue, east on National Avenue to 6th Street, south on 6th Street to Becher Street.

South: Becher Street east from 6th Street to Lake Michigan (body of water).

East: Lake Michigan (body of water).

Elimination of the Federal TSP Secondary and Primary Air Quality Standards

On July 1, 1987 (52 FR 242634), USEPA revised the NAAQS for particulate matter, replacing the TSP indicator with the PM indicator. On the same date, USEPA promulgated final regulations under 40 CFR part 51 for State implementation of the revised NAAQS for PM₁₀. In the preamble to that action, USEPA announced that, because of the importance of the section 107 area designations to the applicability of the TSP increments, it would retain the TSP designations beyond the date on which USEPA approved a State's revised PM State Implementation Plan (SIP) and therefore maintain the state's TSP nonattainment areas.

The 1990 Amendments to the Act contained several pertinent provisions relating to or affecting the TSP area designations. Under section 107(d)(4)(B) of the amended Act, Congress established by operation of law the first nonattainment area designations for PM, and mandated that areas not initially defined as nonattainment are considered to be unclassifiable. The entire State of Wisconsin was designated unclassifiable for PM under the 1990 Amendments to the Act.

On June 3, 1993, USEPA published a final rulemaking replacing TSP PSD increments with equivalent PM₁₀ increments. Because Wisconsin had a delegated PSD program, USEPA noted that the new PM increments became effective in Wisconsin once the rule regarding the new increments became final.

Because TSP designations were no longer necessary and Wisconsin had already been designated as unclassifiable for PM, USEPA deleted all TSP area designations in the State of Wisconsin in a Federal Register notice dated September 13, 1995 (60 FR 47485).

After the removal of the Federal TSP nonattainment designation for portions of the City of Milwaukee, the state designation remained. In order to remove the state nonattainment designation, DNR needed to take action to meet requirements in s. 285.23, Wis. Stats., and Ch. NR 401, Wis. Adm. Code, before the area could be designated an attainment area. This work was completed in 2001.

Section 5-Information Regarding the Redesignation of the Milwaukee TSP Nonattainment Area

Since 1978, the air quality of portions of the City of Milwaukee has been monitored through direct and indirect means. DNR maintained an extensive monitoring network for almost the entire period from 1978-2004. DNR has also watched as particulate matter emissions have steadily decreased. In this section we show the improvement in air quality based on air quality monitoring data from 1978-2004. We also present particulate matter emission inventory data for industrial sources located in and near the existing TSP nonattainment area.

Monitoring Data

A total of 11 monitoring sites were responsible for the original designations of TSP nonattainment in 1978:

- City Maintenance Garage, 230 South Muskego, Milwaukee
- Wisconsin Electric Power Company, 1750 South Kinnikinnic, Milwaukee
- Center for Great Lake Study, 600 East Greenfield, Milwaukee
- Fire Department, 711 West Wells Street, Milwaukee
- Wisconsin Telephone Company, 845 North 3rd St., Milwaukee
- Fire Department, 1313 West Reservoir St., Milwaukee
- Grebe Bakery, 5132 West Lincoln, Milwaukee
- General Electric Plant, 4855 West Electric Avenue, Milwaukee
- Barclay Street, 1550 Barclay Street, Milwaukee
- Greenfield Avenue, 300 East Greenfield Avenue, Milwaukee
- Ervin Zientch Site, 2334 South 52nd Street, Milwaukee

DNR did not continue monitoring at all of these sites after the designation of the area as a nonattainment area. Figures 4 and 5 represent monitoring data for the two longest running monitoring sites--City Maintenance Garage and Center for Great Lakes Study. Each graph contains five bars per year. The bars from left to right identify the number of observations, the first highest concentration, the second highest concentration, the third highest concentration, and the fourth highest concentration. The x axis shows the calendar year; while the y axis shows the TSP concentration in $\mu\text{g}/\text{m}^3$ (or in the case of the first bar for each year, the number of observations).

Figure 4-City Maintenance Garage, 230 South Muskego

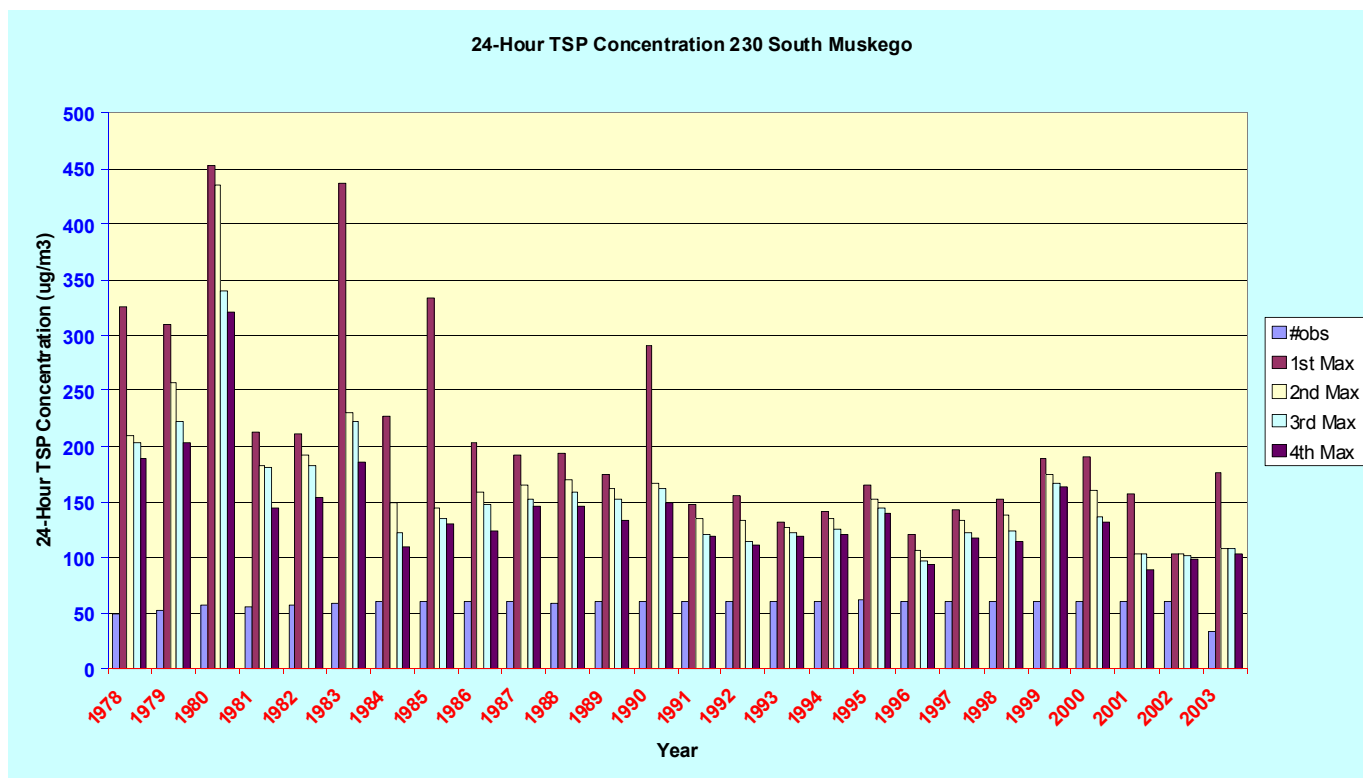
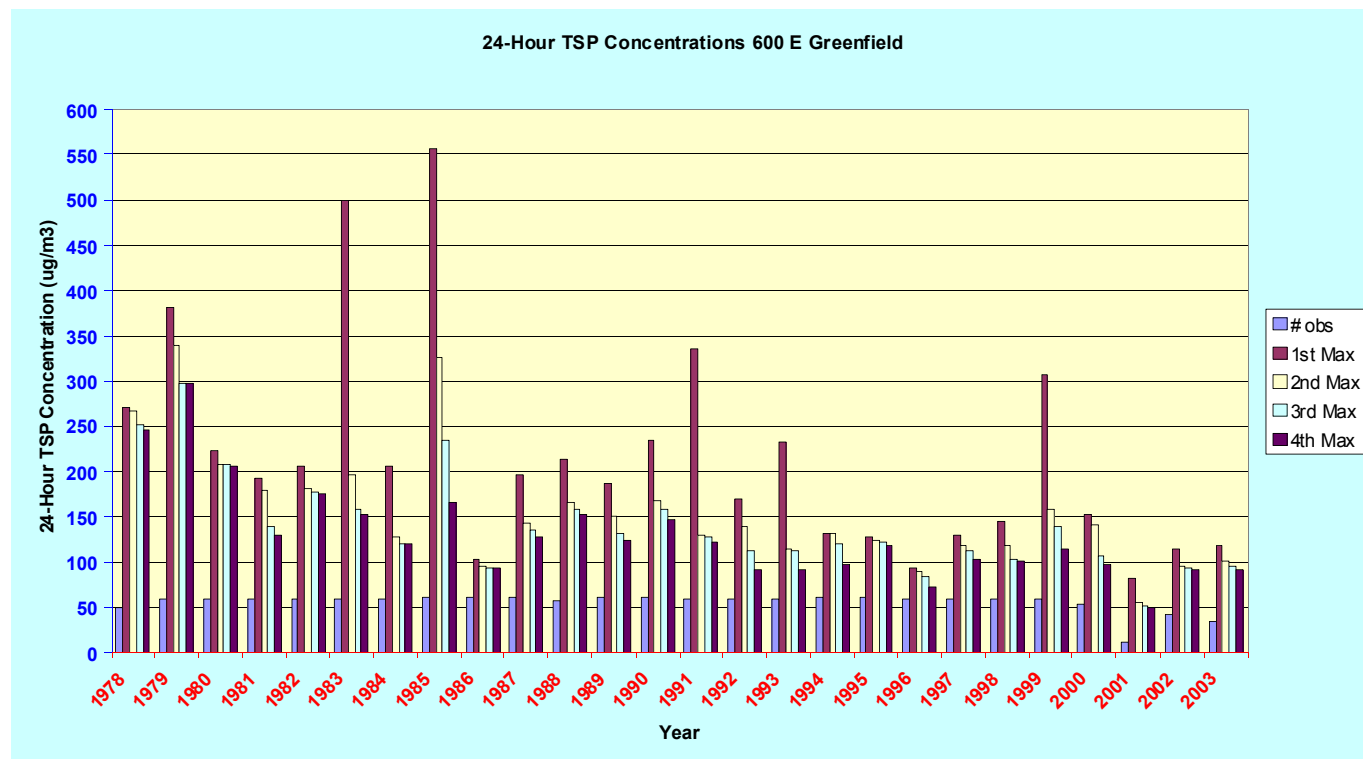


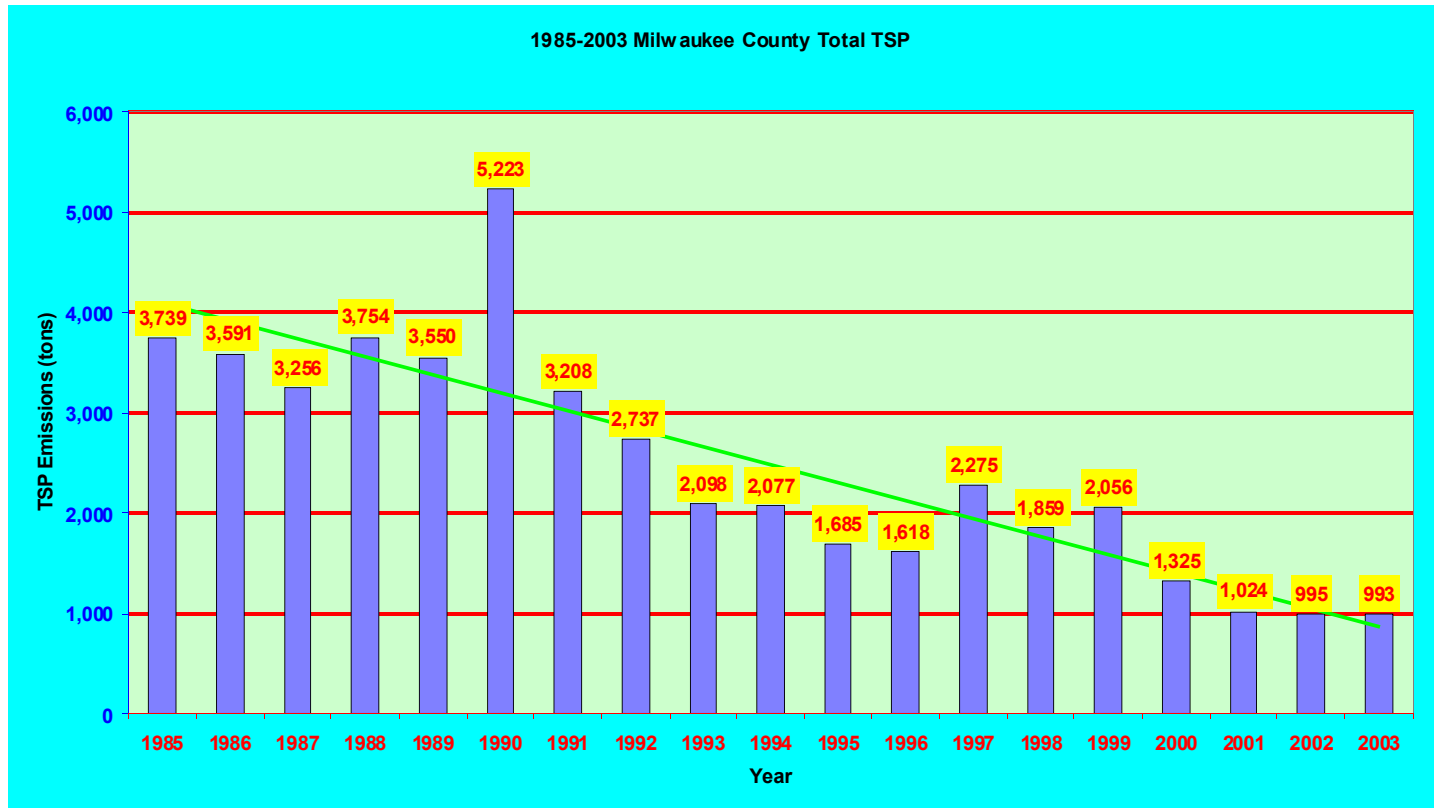
Figure 5-Center for Great Lakes Study, 600 East Greenfield



Air Emission Data

Milwaukee County TSP emissions have shown a downward trend from 1985-2003. Reasons for the decrease in emissions include the increasing efficiency of dust control equipment and the significant decrease in pollutant emissions from the We Energies Oak Creek Generating Station after closure of four of its eight generation units.

Figure 6-Milwaukee County TSP Emissions 1985-2003



Located in and near the existing Milwaukee TSP nonattainment area are 53 industrial sources that averaged over 5 tons of particulate emissions from 1985-2003. The names of these industrial sources are listed in the second column of Table 6.

Table 6-Industrial Sources Located In and Near the TSP Nonattainment Area

Milwaukee Stationary Source Emission Sources Located In or Near Milwaukee TSP Nonattainment Area 1985-2003						
Map ID	Facility Name	Facility Address	Facility City	1985-2003		
				Average	Maximum	Minimum
				Tons	Tons	Tons
007690	We Energies-Oak Creek Station	4801 E ELM RD	OAK CREEK	556	1,273	99
005710	MAYNARD STEEL CASTING COMPANY	2856 S 27TH ST	MILWAUKEE	327	596	26

Table 6 (cont)
Industrial Sources Located In and Near the TSP Nonattainment Area

Milwaukee Stationary Source Emission Sources Located In or Near Milwaukee TSP Nonattainment Area 1985-2003						
Map ID	Facility Name	Facility Address	Facility City	1985-2003		
				Average	Maximum	Minimum
				Tons	Tons	Tons
095910	PAYNE & DOLAN-FRANKLIN AGGR.	6211 W RAWSON AVE	FRANKLIN	227	779	1
029250	MMSD-JONES ISLAND WASTE-WATER TREATMENT PLANT	700 E JONES ST	MILWAUKEE	194	984	27
008350	VULCAN MATERIALS CO. FRANKLIN # 306	5713 W RAWSON AVE	FRANKLIN	190	1,509	4
007800	We Energies-Valley Station	1035 W CANAL ST	MILWAUKEE	147	270	19
014620	PPG Industries	10800 S 13th Street	MILWAUKEE	124	124	124
031560	ADM MILLING	4200 W BURNHAM ST	WEST MILWAUKEE	87	420	1
095470	DIDION INC	335 S. EMMER LN.	MILWAUKEE	76	138	31
006260	Metal Technologies, Inc.-West Allis Ductile Iron	1706 S 68TH ST	WEST ALLIS	72	181	29
027600	GREDE FOUNDRIES INC-MILWAUKEE STEEL DIVISION	1320 S 1ST ST	MILWAUKEE	66	226	16
793520	CONCRETE AGGREGATES INC	5400 N 124TH.	MILWAUKEE	60	385	0
096680	Medusa Cement Co. - Milwaukee	2006 S. Kinnickinnic Ave.	MILWAUKEE	56	109	4
006370	Milwaukee Gray Iron, LLC	1501 S 83RD ST	WEST ALLIS	51	231	20
472770	FRANTZ COMPANY, INC.	12314 W SILVER SPRING DR	MILWAUKEE	50	64	36
096350	MILLER COMPRESSING COMPANY	1640 W BRUCE ST	MILWAUKEE	48	165	5
091400	NIDERA	960 E BAY ST	MILWAUKEE	47	178	0
012310	GREDE FOUNDRIES INC LIBERTY PLANT	6432 W STATE ST	WAUWATOSA	43	122	9

Table 6 (cont)
Industrial Sources Located In and Near the TSP Nonattainment Area

Milwaukee Stationary Source Emission Sources Located In or Near Milwaukee TSP Nonattainment Area 1985-2003						
Map ID	Facility Name	Facility Address	Facility City	1985-2003		
				Average	Maximum	Minimum
				Tons	Tons	Tons
027160	NORTHWEST ASPHALT PRODUCTS INC	11710 W HAMPTON AVE	MILWAUKEE	40	92	10
013960	FROEDTERT MALT, DIVISION OF IMC, LLC.	2100 MILLER PARK WAY	WEST MILWAUKEE	37	242	1
027050	MILWAUKEE COUNTY POWER PLANT	9250 W WATERTOWN PLANK RD	WAUWATOSA	34	67	16
011870	BRIGGS & STRATTON CORP WAUWATOSA PLANT	3300 N 124TH ST	WAUWATOSA	33	92	15
029800	MID CITY FOUNDRY CO	1521 W BRUCE ST	MILWAUKEE	33	102	2
029360	WABASH ALLOYS L.L.C.	9100 S 5TH AVE	OAK CREEK	32	98	4
023750	PFISTER & VOGEL LEATHER	1531 N WATER ST	MILWAUKEE	28	284	0
021880	ALUMINUM CASTING & ENGINEERING CO INC	2039 S LENOX ST	MILWAUKEE	28	63	4
202830	DYNAMIC COLOR SOLUTIONS, INC.	956 E BAY ST	MILWAUKEE	28	97	0
053450	JACOBUS PETROLEUM PRODUCTS	1726 S HARBOR DR	MILWAUKEE	27	80	0
011100	FROEDTERT MALT CORP	3830 W GRANT ST	WEST MILWAUKEE	26	334	3
009120	PELTON CASTEEL INC-W DEWEY PL PLANT	2929 S CHASE AVE	MILWAUKEE	21	136	6
005280	St. Mary's Cement	1975 S. Carferry Dr	MILWAUKEE	21	21	21
008680	MOTOR CASTINGS CO - PLANT 1	1323 S 65TH ST	WEST ALLIS	21	45	10
176870	WISCONSIN WRECKING COMPANY	311 E GREENFIELD AVE	MILWAUKEE	19	28	3
230440	Morris Material Handling, Inc.	315 W FOREST HILL AVE	OAK CREEK	17	101	0

Table 6 (cont)
Industrial Sources Located In and Near the TSP Nonattainment Area

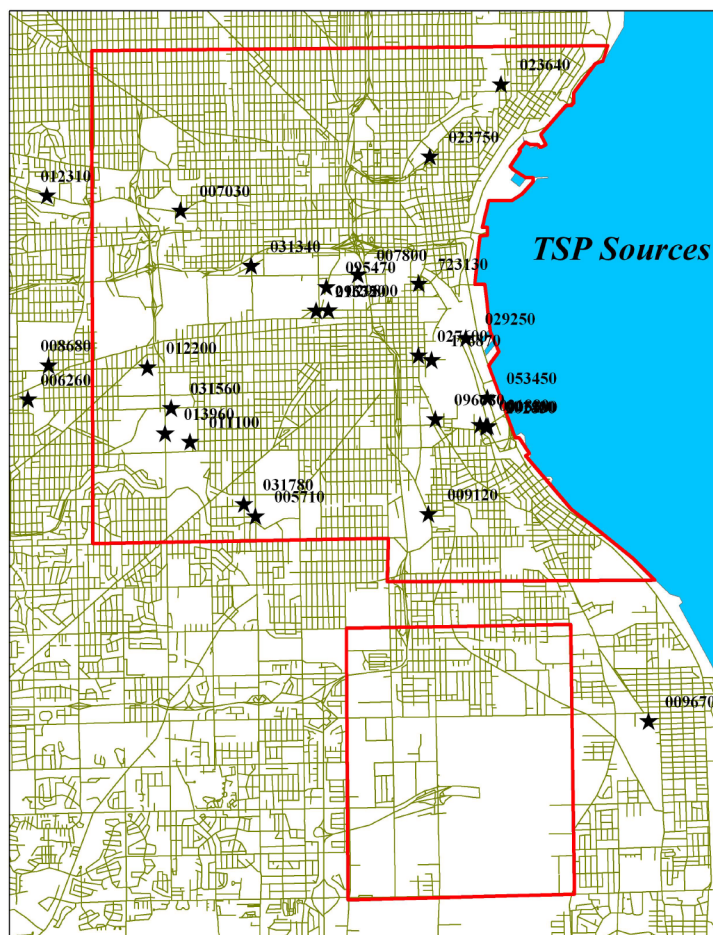
Milwaukee Stationary Source Emission Sources Located In or Near Milwaukee TSP Nonattainment Area 1985-2003						
Map ID	Facility Name	Facility Address	Facility City	1985-2003		
				Average	Maximum	Minimum
				Tons	Tons	Tons
Waste Manage- ment of Wis, Inc.	10712 S 124TH ST	FRANKLIN	16	18	0	10
EGS Electrical Group - Appleton	2105 5TH AVE	SOUTH MILWAU- KEE	16	29	1	1
SHORELINE OF WISCONSIN INC	1200 E. Hampton Road	MILWAUKEE	13	25	3	16
BRADY USA, INC., FLORIST AVE. PLANT	2230 W FLORIST AVE	GLENDALE	12	77	0	15
DIC Imaging	7300 S 10TH ST	OAK CREEK	12	15	4	2
MILLER BREW- ING COMPANY MILWAUKEE PLANT	4000 W STATE ST	MILWAUKEE	10	26	2	4
MILLER COM- PRESSING CO	1640 WEST BRUCE ST	MILWAUKEE	9	9	9	0
UNIVERSAL FOODS/RED STAR YEAST	2702 W GREVES ST	MILWAUKEE	9	20	0	4
C & D Technolo- gies, Inc. - Dy- nasty Division	900 E KEEFE AVE	MILWAUKEE	8	18	1	0
MILWAUKEE MALLEABLE & GREY IRON WORKS/MILW. TOOL	2773 S 29TH ST	MILWAUKEE	8	16	1	0
HERCULES IN- CORPORATED	5228 N HOPKINS ST	MILWAUKEE	6	94	0	3
WIS ELECTRIC POWER LIGHT- WEIGHT AGGRE- GATE	4801 E ELM RD	OAK CREEK	6	10	4	6
Tower Automotive Products Compa- ny, Inc.	3533 N 27TH ST	MILWAUKEE	6	10	2	21
BORDEN CHEMI- CAL, INC.	7350 S. 6TH STREET	OAK CREEK	6	17	1	10
KRAMER INTER- NATIONAL	114 E PITTS- BURGH AVE	MILWAUKEE	6	11	1	3
SIGNICAST CORP	9000 N 55TH ST	MILWAUKEE	6	27	0	0

Table 6 (cont)
Industrial Sources Located In and Near the TSP Nonattainment Area

Milwaukee Stationary Source Emission Sources Located In or Near Milwaukee TSP Nonattainment Area 1985-2003						
Map ID	Facility Name	Facility Address	Facility City	1985-2003		
				Average	Maximum	Minimum
				Tons	Tons	Tons
009670	PATRICK CUDAHY INC	4801 S KINGAN AVE	CUDAHY	6	11	1
012200	Rexnord Industries, Inc.	4701 W GREENFIELD AVE	WEST MILWAUKEE	5	37	1
023640	WISCONSIN PAPERBOARD CORP	1514 E THOMAS AVE	MILWAUKEE	5	24	0

The next graphic shows the location of the significant industrial sources in and near the Milwaukee TSP nonattainment area.

Figure 7
Locations of Industrial Sources Identified in Table 6



Figures 8-12 show that the reported emissions for the top five TSP emitting industrial sources have decreased significantly from 1985-2003. From Table 6, the top five TSP emitting industrial sources are:

- We Energies-Oak Creek Station
- Maynard Steel Casting Company
- Payne and Dolan-Franklin Aggregate
- Milwaukee Metropolitan Sewerage District-Jones Island Wastewater Treatment Plant
- Vulcan Materials Co -Franklin Quarry

Figure 8
We Energies Oak Creek Station
Reported TSP Emissions 1985-2003

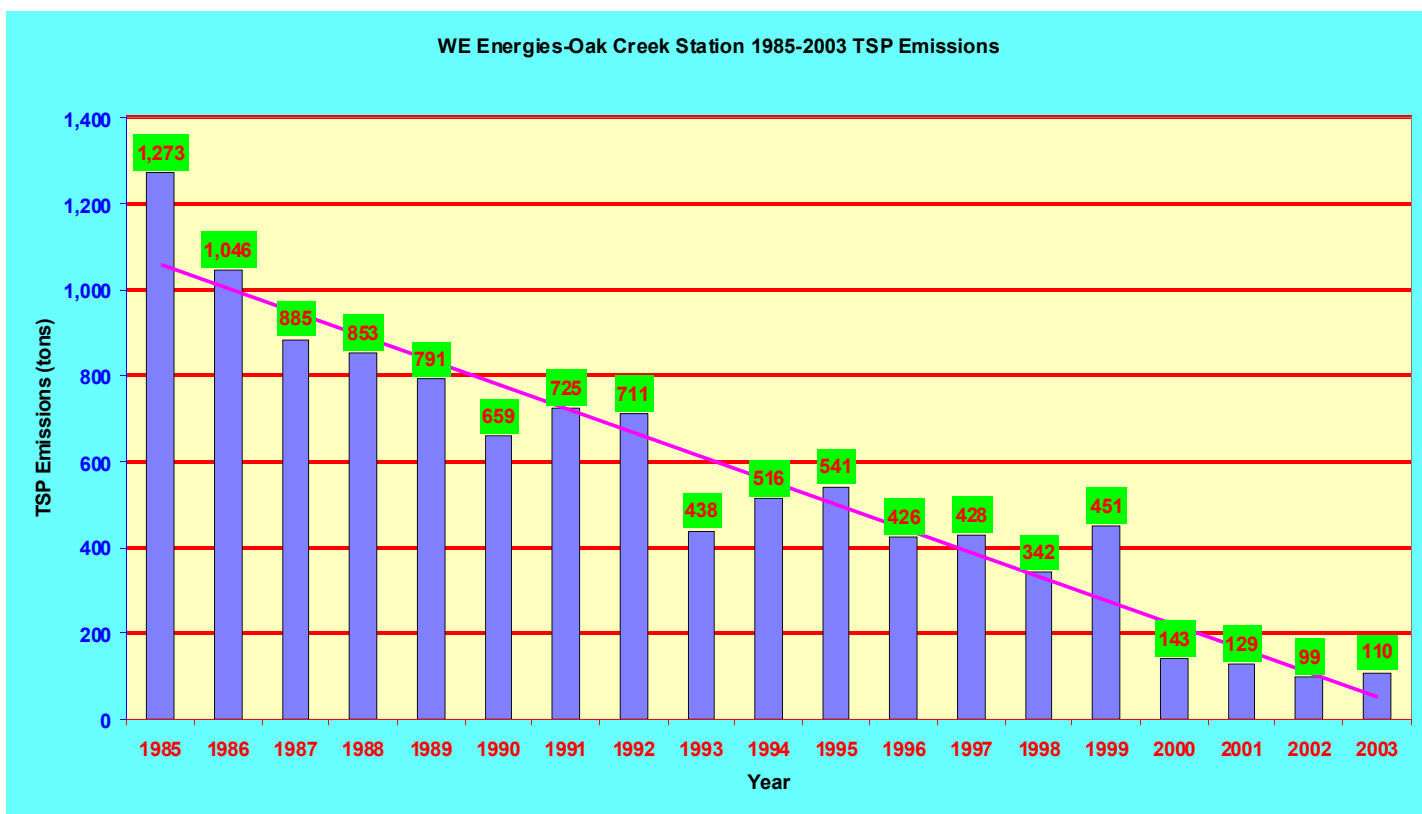


Figure 9
Maynard Steel Castings
Reported TSP Emissions 1985-2003

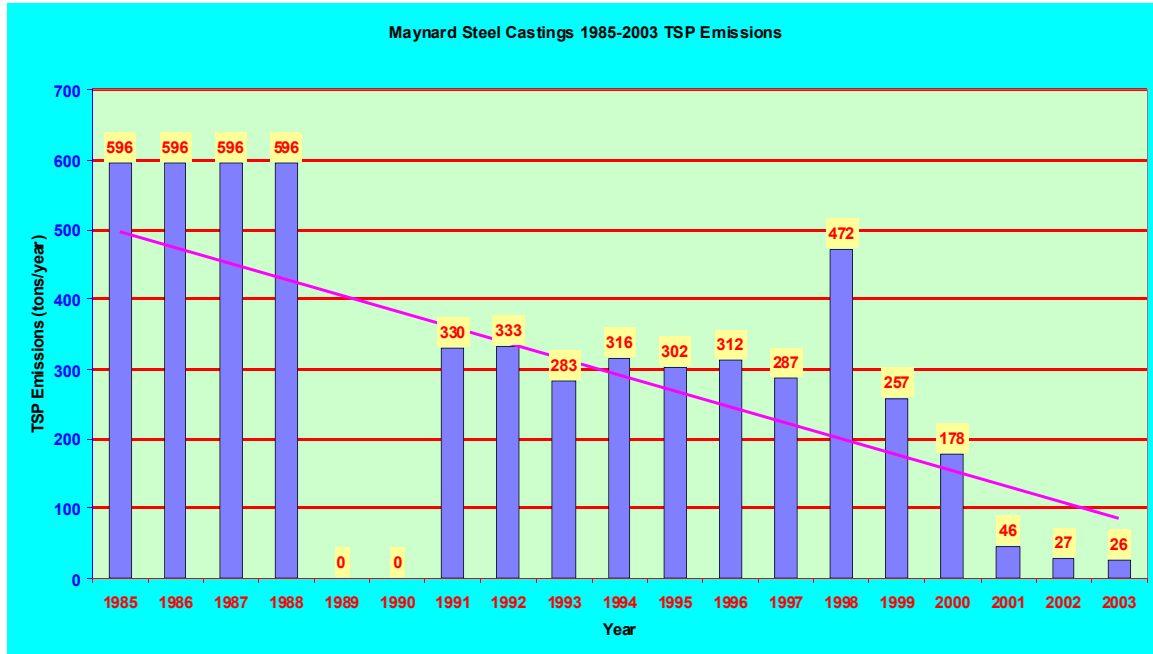


Figure 10
Franklin Aggregates
Reported TSP Emissions 1985-2003

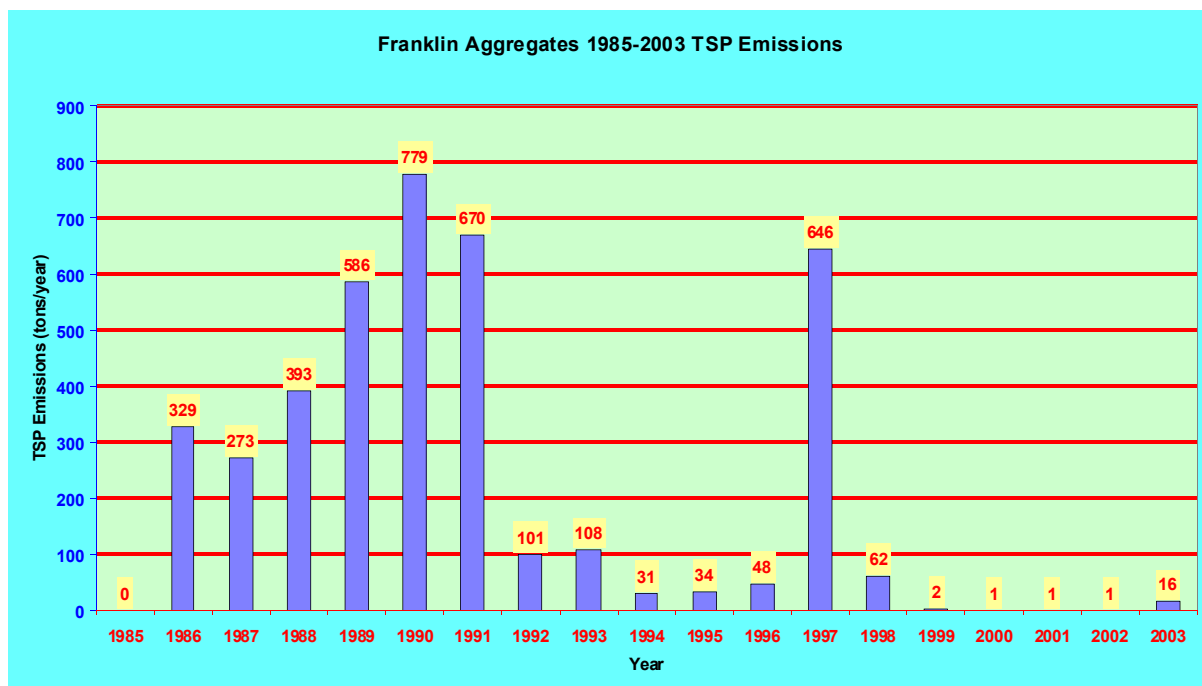


Figure 11
MMSD-JONES ISLAND WASTEWATER TREATMENT PLANT
Reported TSP Emissions 1985-2003

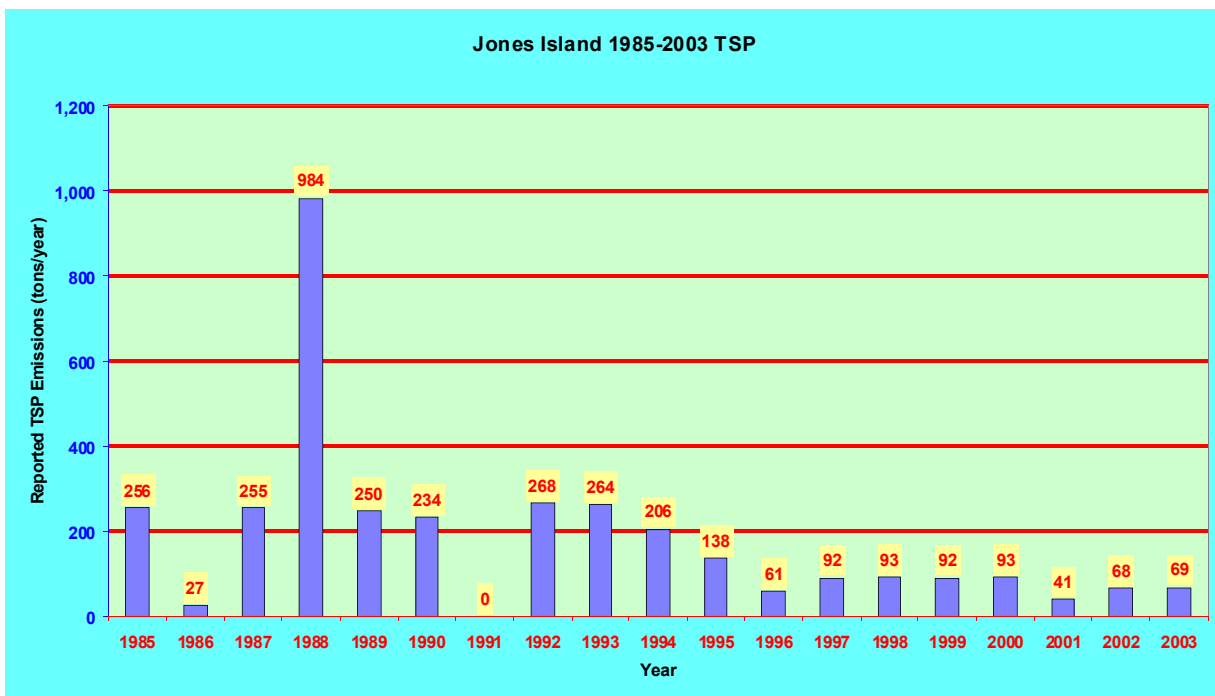
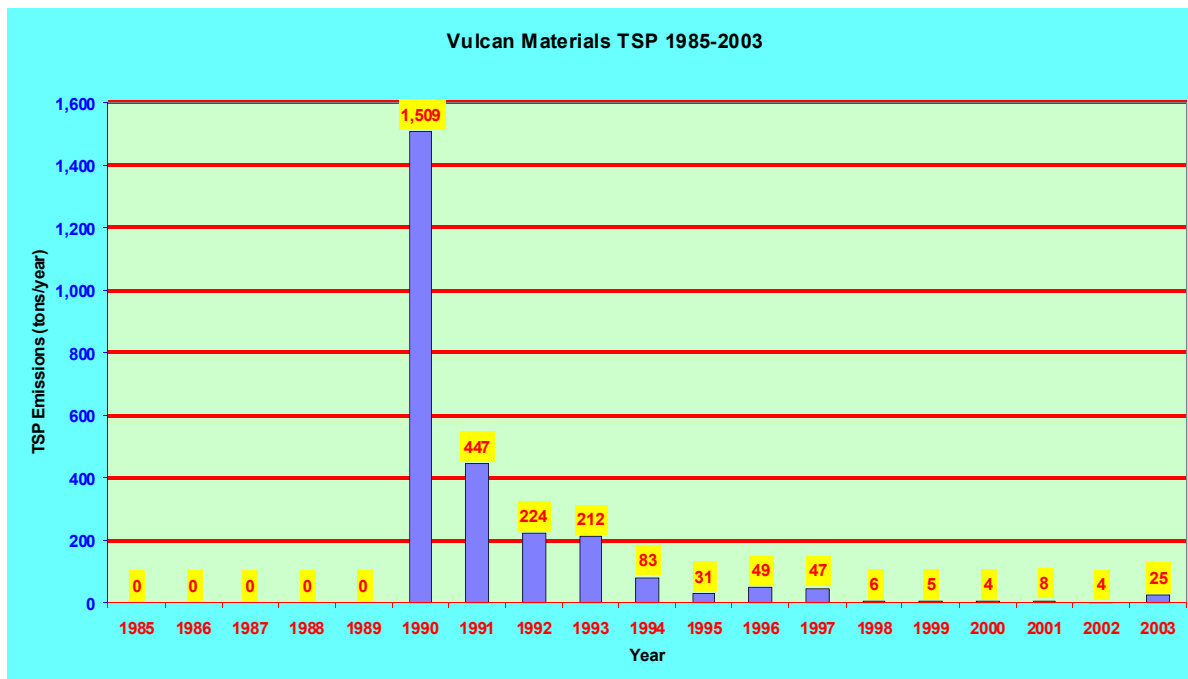


Figure 12
VULCAN MATERIALS CO. FRANKLIN # 306
Reported TSP Emissions 1985-2003



Section 6: Redesignation Requirements

Section 285.23, Wis. Stats., and ch. NR 401, Wis. Adm Code, contain requirements regarding the redesignation of a state nonattainment area to attainment. Section 285.23(1), Wis. Stats., states that “the department shall promulgate by rule procedures and criteria to identify a nonattainment area and to reclassify a nonattainment area as an attainment area”. Section NR 401.025(3), Wis. Adm. Code, states that the Department may issue a document to reclassify a nonattainment area to an attainment area when it has determined that the ambient air quality standard is being met in the area. The statute and rules require DNR to hold a public hearing after giving 30 days prior notice and also require DNR to accept written comments on the Technical Support Document for at least 10 days after the date of the hearing.

Section 7: Recommendations

DNR has determined the current state TSP nonattainment area in Milwaukee should be redesignated to attainment because:

- 1 TSP monitoring data collected over the last eight calendar quarters shows the area attains the Wisconsin 24-hour TSP ambient air quality standard
- 2 Most of the unpaved parking lots responsible for fugitive dust emissions at the time the current nonattainment area was designated nonattainment have been paved.
- 3 The large stationary sources of particulate matter have generally decreased particulate matter emissions over the last 11 years. The particulate matter emissions for this area have remained relatively constant over the last three years.

Section 8: References

- 1 Identification and Use of Air Quality Data Affected by Exceptional Events, publication number EPA-450/4-86-007, July, 1986
- 2 Wisconsin Clean Air Act Amendment Program, Volume 1, Nonattainment Areas, Chapter 2, Designation of Primary and Secondary Ambient Air Quality Standard Attainment and Nonattainment Areas, DNR, January, 1978.
- 3 June 5, 1984 Federal Register pages 23195-23196.
- 4 Inventory of Nontraditional Fugitive Emissions from Unpaved Roads, Alleys and Parking Lots in Milwaukee, Wisconsin, DNR, December 1978.